



INL scientist Kurt Myers is working to build a small electricity production and storage system at his home, which mirrors the research he conducts for INL.

Energy researcher building microgrid at home

By Kortny Rolston, *INL Communications & Governmental Affairs*

Unlike most people, Kurt Myers enjoys bringing his work home with him.

The Idaho National Laboratory researcher has installed eight solar panels on the roof of his Idaho Falls home and plans to add battery storage for backup electricity when utility power goes out. It is part of Myers' quest to build a "microgrid" — a small electricity production and storage system that interacts with the larger electrical grid — at his home.

The project mirrors the research Myers conducts for INL. He designs renewable energy-based microgrid systems for military bases and other entities as well as tests batteries that could someday be used to store electricity for several days or weeks. His work supports INL efforts to safely, securely and sustainably expand energy supply and improve efficiency.

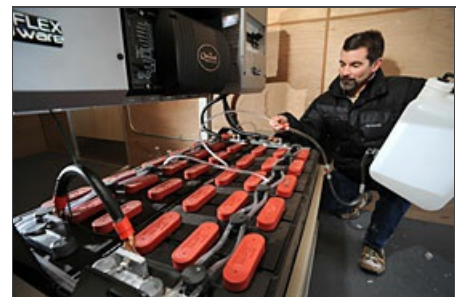
Most of Myers' work is focused on integrating wind, solar and other renewables into the nation's energy mix.

"I wanted to take what I do at work and apply it to my home," Myers said.

Myers began adding solar panels in 2010 after his wife commented that she wished their freezer and refrigerator could run during an extended power outage. About the same time, installed prices for typical residential solar panels/systems dropped dramatically (from \$6-9 per watt to \$3-5 per watt), which made it easier to justify investing in them — especially in an area with low electrical rates.

Myers designed his system to be "grid tied" so it operates in conjunction with Idaho Falls Power, the utility that supplies his home with electricity. The panels provide about 30 percent of the power Myers and his family use each month — although that number has fluctuated since they purchased a Chevy Volt, a plug-in hybrid electric vehicle.

Myers enrolled in the utility's net metering program and receives a credit for the power the panels produce.



Myers tends to the battery bank that can store excess electricity from his home's solar panels.



Myers' solar panels are "grid tied" to operate in conjunction with the utility that supplies electricity to his home.

For Turk, it's a way to incorporate his research into his everyday life.

"There are times I use all the electricity the panels are producing at my house," he said. "Other times, they produce more than we need and that electricity is sent out onto the electrical grid for others to use."

And while a lower monthly bill is nice, Myers embarked on the project for other reasons too.

"By doing this at my home, I am making a statement," he said. "I'm showing people that you can generate electricity locally and that you can integrate renewable energy."

Bob Turk, who works with Myers on renewable energy projects, is completing a similar home project. The INL researcher has installed several solar panels at his Teton County home and tracks his usage and production through Fall River Electrical Cooperative's website.

"If you are going to talk the talk, you need to walk the walk," he said.

Turk and Myers each plan to install additional solar panels as well as batteries that can store the sun-generated electricity until it is needed.

The batteries are key. Grid-tied solar panels shut off during an outage unless they are hooked to a battery or a specifically designed backup power

system

The two will equip their systems with specialized inverters so when the power goes out the panels will feed the battery rather than shutting off.

"That would allow us to get through an outage," Myers said. "One of the points of this project is to produce some of our own electricity and be able to store some and keep producing in case of an emergency."

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